



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,964	04/25/2006	Masatoshi Okazaki	2006_0484A	2344
52349 7590 05/01/2009 WENDEROTH, LIND & PONACK L.L.P. 1030 15th Street, N.W. Suite 400 East Washington, DC 20005-1503				
EXAMINER				
LUKS, JEREMY AUSTIN				
ART UNIT		PAPER NUMBER		
2837				
MAIL DATE		DELIVERY MODE		
05/01/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/576,964

Applicant(s)

OKAZAKI ET AL.

Examiner

JEREMY LUKS

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-14, 16-23, 25-32 and 40-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-14, 16-23, 25-32 and 40-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/17/09 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4, 6-13, 16-22, 25-32 and 40-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (Applicant's Admitted Prior Art, Specification, Pages 1-6) in view of Johnston (4,518,642).

With respect to Claims 1, 2, 13, 22, 31, 40 and 43, AAPA teaches electronic equipment comprising a speaker (Specification, Page 4, Line 24 – Page 5, Line 4), wherein said speaker includes a diaphragm and a dust cap (Page 5, Lines 5-21), and each of said diaphragm and said dust cap is an injection-molded product made of a mixture containing a thermoplastic resin material (Page 4, Lines 1-20) and a fiber

material (Page 5, Lines 18-25 – the Examiner considers a pulp (raw material of paper) to be a fiber material); wherein it is known to add a secondary granular thermoplastic resin to a primary thermoplastic resin (Specification, Page 4, Lines 1-20). AAPA fails to teach wherein said fiber material contains at least one of wood fiber, leaf fiber, bast fiber, seed fiber, fruit fiber, stem fiber, and animal fiber; wherein the granular thermoplastic resin is mixed with the primary composite of thermoplastic resin and fiber material, said primary composite material being formed of a dehydrated wet-mixture of fibrous thermoplastic resin and said fiber material. Johnston teaches wherein it is known to form a speaker diaphragm and dust cap when used in combination, of a mixture containing a thermoplastic resin material and a fiber material (Col. 2, Lines 4-10), wherein said fiber material contains at least one of wood fiber, leaf fiber, bast fiber, seed fiber, fruit fiber, stem fiber, and animal fiber (Col. 2, Lines 16-19); and when used in combination mixture being constituted by a secondary composite formed of a complex of a primary composite material with granular thermoplastic resin (of AAPA as indicated above), and wherein it is known to provide a primary composite material being formed of a dehydrated wet-mixture of fibrous thermoplastic resin and said fiber material (when combined with AAPA) (Col. 4, Lines 29-65). Because AAPA teaches that the speaker diagram and dust cap are formed from the same materials, the combination teaches that the Johnston material can be used to form both a speaker diaphragm and dust cap. Further, the Examiner considers it well known in the art that these two elements are formed from the same materials. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of AAPA, with the

apparatus of Johnston to combine the advantageous frequency response and humidity insensitivity characteristics of thermoplastic diaphragms with the advantageous low mass, low cost and temperature characteristics of paper diaphragms. Further, regarding formation of materials (i.e. dehydrated wet mixture), the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, this limitation has been given little patentable weight.

With respect to Claim 4, Johnston teaches wherein said thermoplastic resin material is one of polypropylene and engineering plastic (Col. 2, Lines 10-16).

With respect to Claim 6, Johnston teaches wherein said fiber material contains the wood fiber (Col. 2, Lines 16-19), and said wood fiber contains at least one of kraft pulp and sulfite pulp (Col. 4, Lines 11-16).

With respect to Claims 7, 16 and 25, AAPA teaches wherein it is known to provide a mixture including reinforcement (Page 1, Line 24 – Page 2, Line 3). Further, the fiber material taught by Johnston (Page 2, Lines 4-10) could be considered reinforcement.

With respect to Claims 8, 17 and 26 Johnston teaches said fiber material has a fiber length of 0.2 mm to 20 mm (Col. 3, Lines 48-57). Further, a change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955). Still further, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working range involves only routine skill in the art. In re Aller, 105 USPQ 233.

With respect to Claims 9, 18 and 27 Johnston teaches said mixture contains 5% to 70% by weight of said fiber material (Col. 3, Lines 60-68).

With respect to Claims 10-12, 19-21, 28-30, 41 and 42, AAPA and Johnston are relied upon for the reasons and disclosures set forth above. AAPA and Johnston fail to teach wherein said diaphragm and said dust cap is black or natural color; wherein in said diaphragm and said dust cap, said thermoplastic resin material and said fiber material are different in color from each other; and wherein in said diaphragm and said dust cap, said thermoplastic resin material is transparent or semi-transparent.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide wherein said diaphragm and said dust cap is black or natural color; wherein in said diaphragm and said dust cap, said thermoplastic resin material and said fiber material are different in color from each other; and wherein in said diaphragm and said dust cap, said thermoplastic resin material is transparent or semi-transparent, since the courts have stated that matters relating to ornamentation only which have no mechanical function cannot be relied upon to patentably distinguish the claimed invention from the prior art. *In re Seid*, 161 F.2d 229, 73 USPQ 431 (CCPA 1947).

With respect to Claim 32, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. If the prior art structure is capable of performing the intended use, then it

meets the claim. Ex Parte Masham, 2 USPQ F.2d 1647 (1987). Further, the Examiner considers it well known to mount an electronic speaker device on or in a car.

3. Claims 3, 14 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (Applicant's Admitted Prior Art, Specification, Pages 1-6) in view of Johnston (4,518,642) as applied to claims 1, 13 and 22 above, and further in view of Umetsu (5,804,634). AAPA and Johnston are relied upon for the reasons and disclosures set forth above. Johnston further teaches a thermoplastic resin material (Col 2, Lines 4-16), and that a variety of thermoplastic materials can be used (Col. 5, Lines 58-59). AAPA and Johnston fail to teach wherein the resin material is a crystalline olefin resin or an amorphous olefin resin. Umetsu teaches using a crystalline olefin resin in a molded product, such as a speaker (Col. 11, Lines 35-47). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of AAPA as modified, with the apparatus of Umetsu to give the speaker balanced rigidity and toughness.

Response to Arguments

4. Applicant's arguments with respect to claims 1-4, 6-14, 16-23, 25-32 and 40-43 have been considered but are moot in view of the new ground(s) of rejection. The Examiner considers the obvious combination of AAPA, Johnston and Umetsu to teach all of the limitations as claimed by Applicant.

5. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies

(i.e., a method for manufacturing a diaphragm) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). All of the claims are directed toward an apparatus. As noted above, the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, these limitations have been given little patentable weight.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Luks whose telephone number is (571) 272-2707. The examiner can normally be reached on Monday-Thursday 8:30-6:00, and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Benson can be reached on (571) 272-2227. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeremy Luks/
Examiner, Art Unit 2837

/Jeffrey Doneis/
Primary Examiner, Art Unit 2837